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agent and Haidenhain's iron alum haematoxylin, or Flemming's triple stain, the young cells, especially of the dermatogen and plerome, show an intricate network of canals, and older cells show a gradual transition from the network, which is a single structure, to the familiar appearance obtained by current methods. This method promises to solve the problem of the origin of the vacuole, and at the same time it is excellent for nuclear structures.—CHARLES J. CHAMBERLAIN.

Mitochondria.—The small bodies variously known as mitochondria, chondriosomes, chondriokonten, and chromidial substance, have been known to zoologists for some time, but it is only recently that they have attracted any serious attention among botanists. A short paper by LEWITSKI²⁴ describes the mitochondria in young cells of *Pisum sativum* and *Asparagus officinale*. In the root tip the mitochondria become transformed into leucoplasts, and in the stem tip into chloroplasts. The mitochondria divide and are believed to be an essential part of the cytoplasm. No mitochondria were found inside the nucleus, and the author does not believe that there is any passage of mitochondria between nucleus and cytoplasm. Division of mitochondria is figured and described.—CHARLES J. CHAMBERLAIN.

Origin of the plastid.—For nearly twenty years the theory that the plastid is a permanent organ of the cell, arising only by the division of a preexisting plastid, has been generally accepted, doubtless on account of the thorough investigations of SCHIMPER and of MEYER. When LEWITSKI's paper appeared, claiming that plastids arise from chondriosomes, MEYER²⁵ at once denied the claim and demanded proof. For several years the reviewer has doubted the accuracy of the conclusion reached by both SCHIMPER and MEYER that the plastid arises only by the division of a pre-existing plastid. Their evidence seems more voluminous than convincing. It is to be hoped that this incipient controversy will settle the status of the plastid.—CHARLES J. CHAMBERLAIN.

²⁴ LEWITSKI, G., Ueber die Chondriosomen in pflanzlichen Zellen. Ber. Deutsch. Bot. Gesell. **28**:538-546. *pl.* 17. 1910.

²⁵ MEYER, ARTHUR, Bemerkungen zu G. LEWITSKI: Ueber die Chondriosomen in pflanzlicher Zellen. Ber. Deutsch. Bot. Gesell. **29**:158-160. 1911.